

BRIEF COMMUNICATION

Tomorrow's academic health sciences library today EC

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INTRODUCTION

In 2000, Davidoff and Florance introduced a new profession, the informationist [1], and two years later a conference jointly sponsored by the Medical Library Association and the National Library of Medicine looked at the efficacy of such a profession, including the requirements and financial models necessary to make it feasible in the health care environment [2]. In a 2005 *New England Journal of Medicine* article, Lindberg and Humphreys envisioned the future of medical libraries in 2015, including a move toward a totally electronic library with librarians becoming information specialists in context, working outside of the library with other health professionals [3].

A 2008 systematic review of literature looking at the new information specialist found that a lack of qualified candidates who had additional academic qualifications and a lack of financial support for candidates with more credentials than the traditional librarian precluded the full adoption of this new professional [4]. In a 2011 *JAMA* editorial, Davidoff and Miglus called for an expansion of the relatively nascent informationist concept in academic medical centers to support evidence-based practice [5]. More literature on new roles for librarians is reviewed in a companion comment and opinion piece, "Evolution, Revolution, or Obsolescence: An Examination of Writings on the Future of Health Sciences Libraries," published in this issue of the *Journal of the Medical Library Association* [6].

To attempt to establish the directions that academic health sciences libraries are taking to meet future challenges, the author surveyed library directors to determine their progress toward next generation knowledge management roles, the changes in the format of their collections, the reengineering of their physical facilities, and their willingness to innovate beyond traditional library mandates.

METHODS

A questionnaire (Appendix A, online only) was developed and reviewed by three senior medical faculty members from around the country who had both survey research and information management

expertise. Because of the diversity in academic health sciences libraries and the difficulty in achieving a representative sample, the entire population was surveyed. This research was reviewed and approved by the Indiana University Institutional Review Board (study #1103005026). Through a link to SurveyMonkey, the survey and consent form were sent to the Association of Academic Health Sciences Libraries (AAHSL) directors' email discussion list.

The questionnaire asked if the respondents would agree to participate in a semi-structured interview (Appendix B, online only) to validate and further explore findings in the survey analysis. Questions centered on collaborations, new service models, and participation in research and educational programs. Eight directors of academic health sciences libraries were subsequently interviewed, and common themes are presented. The responses were reviewed for both word count and concept frequency.

RESULTS

Eighty directors (58%) of academic health sciences libraries responded to the "AAHSL: Tomorrow's Library Today" survey. The respondents answered virtually all of the questions, making all of the completed surveys usable. The results are presented below with the exception of medical informatics collaborations, which have been analyzed in another manuscript that is currently under review.

The use of the web-based survey precluded identification of respondents. Of the twenty-eight that agreed to be interviewed, three were from recently established medical schools. The respondents represented the entire country with eight from the South, eight from the Mid-Atlantic and Northeast, seven from the Midwest, four from California and the West, and one from Canada.

In looking at infrastructure, 80 (100%) reported purchasing electronic journals, reporting an average of 91% of current subscriptions, 45% of backfiles, and 26% of books purchased in electronic formats. Fifteen (19%) respondents reported that they had reduced hours, and an additional 8 (10%) indicated the probability of reducing hours in the future.

The informationist literature anticipated the need for dual degrees or advanced credentialing for library professionals [1, 2, 4]. Most respondents reported employing librarians with only the single master's degree in library science (MLS), with an average of 10 librarians per library. However, of the 826 reported librarians, 108 possessed a second master's degree; 28 had a doctorate plus the MLS; and 14 had only the doctorate (PhD).

Less than one full-time equivalent (FTE) librarian per institution worked in either technical services (cataloging, serials management, collection development) or access services (circulation, interlibrary loan), respectively. Active librarian relationships with faculty included participating in the three academic missions of teaching, research, and clinical service



Supplemental Appendix A and Appendix B are available with the online version of this journal.

Table 1
Librarians reporting participation in three academic missions and formal liaison activities

Mission	Response	
	%	n
Full-time equivalent (FTE) involved in teaching (n=62)		
For-credit required courses	96.8%	60
For-credit elective courses	72.6%	45
Other (workshops, continuing medical education, etc.)	64.5%	40
FTE involved in clinical activities (n=60)		
Round with clinicians	81.7%	49
Participate in morning report	83.3%	50
Serve in an informationist capacity	81.7%	49
Other (nursing support, patient education, etc.)	53.3%	32
FTE involved in unfunded research (n=38)		
Sole researcher	55.3%	21
With others in the library	81.6%	31
With faculty in the same institution	84.2%	32
With others outside of the institution	55.3%	21
FTE involved in funded research (n=39)		
Sole researcher	17.9%	7
With others in the library	61.5%	24
With faculty in the same institution	61.5%	24
With others outside of the institution	43.6%	17
Sources of funding (n=41)		
National Library of Medicine (grant or contract)	34.1%	14
National Network of Libraries of Medicine	68.3%	28
National Center for Research Resources (National Center for Advancing Translational Sciences)/ Clinical and Translational Science Awards	7.3%	3
Other National Institutes of Health	7.3%	3
Agency for Healthcare Research and Quality	7.3%	3
Other federal government	4.9%	2
Foundations	19.5%	8
Other (professional societies, state agencies, etc.)	19.5%	8
Formal liaison activities (n=51)		
Attend departmental meetings	82.4%	42
Hold office hours for reference questions	56.9%	29
Consult on grants	62.7%	32
Participate in writing systematic reviews	54.9%	28
Team teach departmental courses	78.4%	40
Other (embed librarians, manage departmental blogs, etc.)	33.3%	17

Note: 80 individuals responded to the survey. Numbers shown here represent those that reported any of these activities.

and serving as departmental liaisons. Table 1 shows the involvement in each.

The survey had six open-ended questions not dealing with biomedical informatics collaborations. The first two dealt with reasons for reducing hours, and the vast majority of responses related to reduction in funding resulting in staff cuts. The third question asked for examples of operations personnel not involved with either technical or access services. The primary responses were history of medicine librarians, archivists, and information services personnel.

Clinical activities, beyond those specifically mentioned, included service on nursing committees, participation on care teams, a physician librarian who has an active clinical teaching role, and several licensed health care providers/librarians who provided information services in a number of venues. Those involved in education tended to focus on teaching library skills. Additional research funding sources included local governments, the Canadian government, and specialty societies.

In the eight interviews, the word "liaison" appeared most frequently (sixteen times) and at least

once in every interview, although one institution used a more formal "informationist" concept interchangeably with "liaison." The second most common word or concept to all of the interviews was "PhD" (fourteen times), followed by "second master's"/"dual degree" (7 times). "Embedding" (or variants such as embed, embedded, and so on) and "medical doctor (MD)" were the third most common words (four times each).

Concepts that permeated the interview responses were the need for librarians to go where information needs might arise; for librarians to possess additional credentialing beyond the MLS, with most of the interviewees feeling that a second, subject-related master's degree or PhD was preferable; and for librarians to become more involved in the fabric of the institution so that they can anticipate where unique skill sets might be required to foster an evidence-rich environment.

DISCUSSION

Many of the new models of academic health sciences libraries are predicated on the basic precept of

knowledge being available anywhere and anytime it is needed. The movement to electronic resources by most of the surveyed librarians ensures this. While some institutions are preserving their library facilities for studying, access to physical resources is becoming less imperative. However, the most common reason for reducing hours is reduced funding.

The majority of librarians are involved in the teaching, research, and clinical service missions of academic medicine, rather than technical or access services. Thirty-five libraries have either clinical informationists or liaisons to clinical departments, showing a trend toward participation in the clinical service mission of academic medicine. A significant number of libraries report participating in the teaching mission, with a focus on information searching skills and evidence-based medicine.

Of the three missions of academic medicine, library involvement in research has lagged behind clinical service and education, perhaps because librarians have traditionally been viewed as search service providers rather than research partners. Additionally, libraries have been slow in developing a research agenda focused on their own discipline [7].

The roles of librarians are changing. Whether the term is liaison or informationist, these professionals are working closely with medical school faculty to foster evidenced-based work products in medical care, research, and education. They collaborate as full partners, moving into accepted roles as colleagues, rather than support personnel who limit their involvement to providing MEDLINE searches and documents to the researchers [2].

To facilitate this collaboration, these liaisons/informationists are leaving the confines of the physical library building and becoming embedded in assigned departments. They offer office hours and serve as information subject specialists for questions that fall into their departments' content areas. These individuals have a working knowledge of medical care, research, and education. They have training beyond what they receive in library school. Having an advanced degree or licensure in one of the health sciences professions makes the clinical informationist role much more accepted by clinicians.

A PhD, a second master's in a biomedical research discipline, or specialized content training makes working on research teams as named investigators much more accepted by researchers [8]. More academic health sciences libraries are recognizing that new hires generally should possess the dual master's or the MLS and the doctorate. The recruitment of specialty-degreed librarians who do not have MLS degrees was noted in both the survey results and the interviews.

Those interviewed shared many of the ideas presented in the open-ended questions on the survey. They also noted knowledge and skill requirements considered critical in the next generation of health sciences librarians, including knowl-

edge of information activities, understanding of information literacy, key stakeholder subject expertise, knowledge management in support of learning organizations, and willingness to be proactive and innovative in seeking opportunities outside of conventional library roles.

LIMITATIONS

The major limitation of this study was the decision, for reasons indicated above, to survey the entire population of academic health sciences library directors without sampling. Although the response rate was over 50%, this was a self-selected sample. Another limitation was that the new roles in the survey were focused on the 3 academic missions and the related liaison activities and did not include areas such as scholarly publishing, creation of new content, involvement in consumer health, and so on.

CONCLUSION

This research has shown that many academic health sciences libraries are changing to meet the increasing demands of the dynamic academic health care environment. The traditional view of the MLS-prepared librarian may no longer be viable for meeting the needs of academic medicine. The future is vibrant and exciting for those willing to participate in the new models of academic health sciences librarianship to foster evidence-based practice across the academic missions. Change is no longer an option but a mandate to the continued existence of academic health sciences libraries.

REFERENCES

1. Davidoff F, Florance V. The informationist: a new health profession? *Ann Intern Med.* 2000 Jun 20;132(12):996–8.
2. Shipman JP, Cunningham DJ, Holst R, Watson LA. The informationist conference: report. *J Med Lib Assoc.* 2002 Oct;90(4):458–64.
3. Lindberg DAB, Humphreys BL. 2015—the future of medical libraries. *N Engl J Med.* 2005 Mar 17;352(11):1067–70.
4. Rankin JA, Grefsheim SF, Canto CC. The emerging informationist specialty: a systematic review of the literature. *J Med Lib Assoc.* 2008 Jul;96(3):194–206. DOI: <http://dx.doi.org/10.3163/1536-5050.96.3.005>.
5. Davidoff F, Miglus J. Delivering clinical evidence where it's needed: building an information system worthy of the profession. *JAMA.* 2011 May 11;305(18):1906–7.
6. McGowan JJ. Evolution, revolution, or obsolescence: an examination of writings on the future of health sciences libraries. *J Med Lib Assoc.* 2012 Jan;100(1):5–9. DOI: <http://dx.doi.org/10.3163/1536-5050.100.1.003>.
7. Eldredge JD, Harris MR, Ascher MT. Defining the Medical Library Association research agenda: methodology and final results from a consensus process. *J Med Lib Assoc.* 2009 Jul;97(3):178–85. DOI: <http://dx.doi.org/10.3163/1536-5050.97.3.006>.
8. Robison RR. Informationist education. *Med Ref Serv Q.* 2008 Fall;27(3):339–47.

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